

AFS Safety Assurance System: What's Next in Oversight

What is SASO?

Current FAA oversight processes have contributed to an outstanding safety record. However, as we strive to make the skies as safe as possible and anticipate future needs and challenges, the FAA must re-evaluate its approach to safety oversight. Through the **System Approach for Safety Oversight (SASO) program, the FAA aims to improve safety beyond current levels by enhancing our risk-based approach.** This approach will first be applied to 14 CFR Parts 121, 135, and 145 by systematically evaluating the health of a certificate holder or applicant's systems to determine their ability to operate safely.

What is the AFS SAS?

Flight Standards' (AFS) **Safety Assurance System (SAS)** refers to the combination of people, processes, and technology that will constitute AFS's safety assurance capability for 14 CFR Parts 121, 135, and 145. Based on the capability, configuration, and effectiveness of a certificate holder's systems, the SAS will help the FAA adapt how oversight is conducted.

This approach will allow the FAA to focus its attention on areas in the aviation system presenting the highest degree of risk. The SAS will also provide necessary decision-support tools that will help the workforce execute safety oversight processes.

This combination of people, processes, and technology not only seeks to increase safety, but also aims to assure that Flight Standards and certificate holders both meet their separate responsibilities in accordance with 49 USC and FAA policy.

The implementation of the AFS SAS helps fulfill Flight Standards mission elements in the areas of certification, surveillance, and resolution of safety concerns.

How is the AFS SAS being designed?

To develop the AFS SAS, the SASO Program Office is bringing together numerous internal and external groups to design processes and tools to support risk-based oversight. Collaborative workgroups - which include participants from field offices and headquarters divisions - are working to provide, review, and verify information for the SAS. Participants in these workgroups reflect AFS's diverse organization with members from different job roles and geographic locations. The workgroup activities began in November 2008 and will continue through September 2009.

System Safety Basics What Are Hazards and Risks?

- A **hazard** is any real or potential condition that can result in injury, illness, or death to people; damage to, or loss of, a system, equipment, or property; and / or damage to the operating environment
- **Risk** is the composite of the predicted probability and the severity of each possible consequence of each identified hazard

Potential Benefits of the AFS Safety Assurance System (SAS)

- Equips the FAA with tools to assess the health of certificate holders' systems and assures they effectively control and manage risk
- Helps the workforce adapt oversight activities to the operations of an individual air operator or agency
- Aids AFS in providing resources to address areas that pose the highest degree of risk
- Offers the ability to share data, collaborate, and integrate voluntary programs such as internal evaluation and aviation safety action programs

For questions about the AFS SAS, please contact Rich Abbott at richard.j.abbott@faa.gov

For more on SASO, SMS, and SAS, visit SASO online: <http://www.faa.gov/about/initiatives/saso/>

SPOT Briefing Preview The Evolution of System Safety: SASO, SMS, and SAS

The Safety Promotion Outreach Team (SPOT) will be briefing the AFS workforce with a 1.5 hour presentation entitled, ***The Evolution of System Safety: SASO, SMS, and SAS***. The objective of this Briefing is to educate the AFS workforce on the evolution of and relationships between the System Approach for Safety Oversight (SASO), Safety Management Systems (SMS), and the AFS Safety Assurance System (SAS). Over the last two decades, the FAA has included system safety principles into its oversight efforts. The International Civil Aviation Organization (ICAO) has recently emphasized that aviation industry service providers and regulators must formalize their system safety approach and develop SMSs. AVS is now working to integrate regulatory efforts across its lines of business and looking at SMS development across the FAA in other services or offices such as Airports and ATO. In response to the emphasis on SMS, AFS is developing an oversight system, the AFS SAS, to incorporate system safety principles across all FAR Parts. The AFS SAS will help our workforce ensure that certificate holders effectively manage safety. For more details on the Briefing content, see the following six sections below.

Introduction to SASO

This section reviews the purpose and objectives of the SASO Program Office, and covers SASO's approach to integrating system safety into AFS oversight processes.

System Safety

This section reviews the FAA definition of system safety and then offers a comprehensive history of how system safety is really not "new" to the FAA, showing the evolution of how systems such as SPAS and ATOS have been implemented and how training courses on system safety have been developed over the years.

SMS Basics

This section defines both internal (FAA) and certificate holder SMS using FAA Order 8000.369 and then focuses on each of the four SMS components: Policy, Safety Risk Management, Safety Assurance, and Safety Promotion. This section ends with an overview of what AFS offices (e.g., SASO Program Office, FAASTeam, SMS Program Office) are involved in the components of SMS.

Certificate Holder SMS

This section reviews why a certificate holder would want to implement their own SMS, how they can participate in an SMS Pilot Project led by the SMS Program Office, and how the SMS Pilot Project helps certificate holders gain experience in developing an SMS.

AVSSMS

This section covers how AVS brings a greater integration of regulatory efforts between AVS services and offices. In addition, the objective of the AVSSMS is to make sure that risk controls are working across the industry. This section ends with a look at how AVS will begin implementing SMS.

AFS SAS

This section will be of particular importance to the AFS workforce. The AFS Safety Assurance System (SAS) refers to the combination of people, processes, and technology that will constitute AFS's safety assurance capability for 14 CFR Parts 121, 135, and 145. By formalizing system safety principles, such as hazard identification and risk assessment, the AFS SAS will help ensure that certificate holders effectively manage safety. This section also covers the objectives of the AFS SAS and a high level timeline for SAS development and implementation activities.

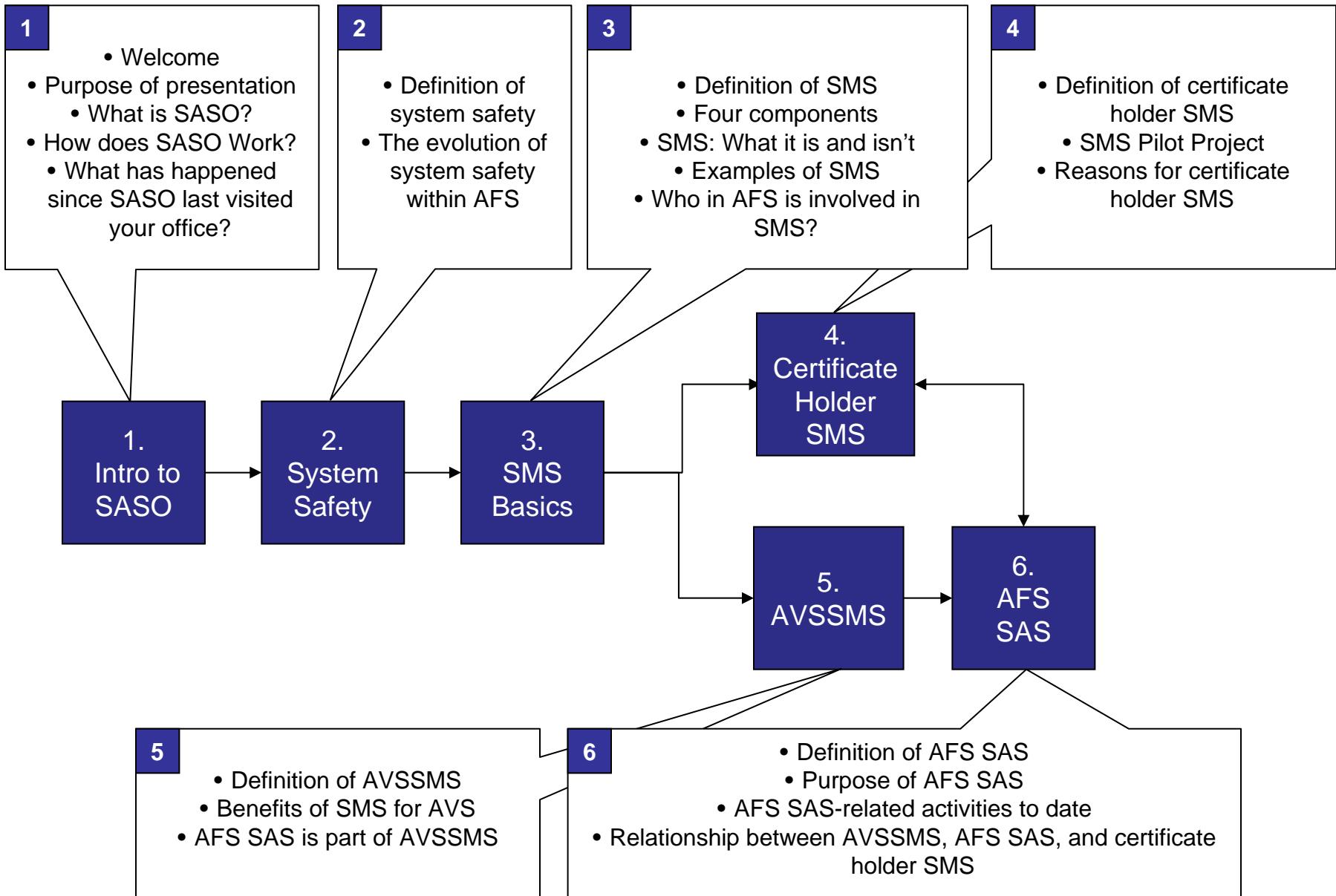
After the Briefing, SPOT members will answer audience questions and note any questions requiring follow-up actions. LDR and eLMS codes are provided for time and learning credit.

SPOT Quick Facts

- The Safety Promotion Outreach Team (SPOT) is a group of 39 volunteers from the workforce
- SPOT is made up of a diverse group (managers and non-managers, technical and non-technical, field and headquarters, geographic locations)
- SPOT members will be briefing all AFS offices on SASO, SMS, and SAS from April through September 2009

SPOT Briefing Storyboard

The Evolution of System Safety: SASO, SMS, and SAS



Safety Promotion Outreach Team (SPOT)

Questions You May Receive Before a SPOT Briefing

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Questions You May Receive Before a SPOT Briefing	
Question	Answer
Top 10 Questions	
1. What is SASO?	<ul style="list-style-type: none">SASO is a program established to review and, if necessary, redesign the processes used by AFS to oversee the US aviation industry in order to achieve the highest level of safety and efficiency <p>Resource: SASO Web site</p>
2. How will SASO achieve its goal?	<ul style="list-style-type: none">SASO is achieving its goal by designing and implementing the AFS Safety Assurance System (SAS) <p>Additional Information:</p> <ul style="list-style-type: none">The SASO Program Office is using four work streams to design and implement the AFS SAS:<ul style="list-style-type: none">Business Process Re-engineering to re-design current oversight processes and fill the gaps in these processes with system safety principlesSystems Alignment to ensure that tools and technology are designed in support of these oversight processesEnterprise Architecture to integrate the tools and processes into the Aviation Safety (AVS)-wide enterprise managementChange Management to ensure that business process changes are facilitated by the transfer of knowledge, skills, tools, processes, systems, and methods for all stakeholders involved in the changes <p>Resource: SASO Web site; SASO Outreach Newsletter, June 2009</p>

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Question	Answer
3. What is the relationship between System Safety and SMS?	<ul style="list-style-type: none"> • System Safety focuses on the relationship between safety risk management and safety assurance • This relationship between safety risk management and safety assurance is at the core of an SMS, but an SMS adds the additional components of policy and safety promotion
4. I'm not an 1825; why should I care about SMS or this briefing?	<ul style="list-style-type: none"> • It is the responsibility of every FAA employee to promote safety • In an SMS environment, every employee is responsible for safety, not just the "safety department" <p>Additional Information</p> <ul style="list-style-type: none"> • Even if you are not an 1825, everything you do to support your office during the planning and implementation of SMS contributes to safety • Your ability to anticipate and expedite training, use technologies related to oversight, and distribute important information will help your colleagues and supervisor be more effective
5. Will the existence of a rule impact the implementation of the SAS?	<ul style="list-style-type: none"> • The AFS SAS will be implemented regardless of the existence of a rule regarding SMS
6. Is SMS the same as ATOS?	<ul style="list-style-type: none"> • No; SMS is not ATOS • ATOS is the FAA's current oversight system for 14 CFR Part 121. SMS is a management system owned by the certificate holder
7. What is the difference between SMS and QMS?	<ul style="list-style-type: none"> • The objective of SMS is <i>safety</i> while the objective of QMS is <i>customer satisfaction</i> <p>Additional Information</p> <ul style="list-style-type: none"> • An SMS goes beyond a traditional QMS by focusing on the safety, human and organizational aspects of an operation
8. What is the difference between the SPOT Briefing and the upcoming FAA 21000018 SMS Initial Training Course offered at the FAA Academy?	<ul style="list-style-type: none"> • The SPOT Briefing focuses on the relationship between System Safety, SASO, AVSSMS and certificate holder SMS, and the upcoming AFS SAS. The audience for the SPOT Briefing is all AFS employees • The SMS Initial Training course covers, in depth, the four components of a Safety Management System with a focus on certificate holder—or external—SMS. The primary audience for this course is all ASIs
9. How does SASO relate to SMS and SAS?	<ul style="list-style-type: none"> • A Safety Management System (SMS) is a risk-based approach to managing an organization's safety • An SMS has four components: Policy, Safety Risk Management, Safety Assurance, and Safety Promotion • The AFS SAS, or Safety Assurance System, refers to the combination of people, processes, and technology that will constitute AFS's safety assurance capability • SASO is currently working to develop the AFS SAS

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10. What is the purpose of the SPOTeam and these briefings?	<ul style="list-style-type: none"> The SPOT and its activities were established to begin to inform and help prepare the workforce for the upcoming changes to be implemented through SMS and SAS <p>Resource:</p> <ul style="list-style-type: none"> SASO Web site
The System Approach for Safety Oversight (SASO)	
11. Who manages SASO?	<ul style="list-style-type: none"> SASO is managed by AFS-30, the SASO Program Office
12. Is SASO a program or a system?	<ul style="list-style-type: none"> SASO is a program founded to integrate system safety into AFS oversight processes and is responsible for planning and implementing the AFS Safety Assurance System (SAS)
13. What is the status of the Pilot Projects that SASO began in Parts 121, 135, and 145?	<ul style="list-style-type: none"> These projects have been successfully completed <p>Additional Information:</p> <ul style="list-style-type: none"> From 2005 to 2008, the SASO Program Office conducted three pilot projects to gather data on existing oversight processes for each of the following three FAR parts: <ul style="list-style-type: none"> ○ 14 CFR Part 121 ○ 14 CFR Part 145 ○ 14 CFR Part 135 SASO concluded a gap analysis, comparing existing oversight processes in 14 CFR Parts 121, 135, and 145 with functional requirements for the Safety Assurance System (SAS), and is currently working to design the AFS SAS The pilot projects were successfully completed in 2008
14. What was SASO's involvement in ATOS?	<ul style="list-style-type: none"> SASO worked with AFS-900 on the process reengineering and on the change management aspects of ATOS 1.2 <p>Additional Information:</p> <ul style="list-style-type: none"> SASO worked with AFS-900 at the three ATOS 1.2 pilot sites by helping prepare the workforce for changes that were coming with the new version of the system SASO also supported the full scale implementation of ATOS 1.2 by evaluating communication practices and training effectiveness after implementation <p>Resources:</p> <p>ATOS "How Goes It" Newsletter, July 2008</p> <p>ATOS "How Goes It" Newsletter, October 2008</p>

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15. Is SPOT the “go-to” team for all employee questions concerning SASO, SMS, and SAS?	<ul style="list-style-type: none"> SPOT can help you with all of these topics, especially SASO and SAS We can answer many SMS questions, but we may also refer you to the SMS Program Office <p>Additional Information:</p> <ul style="list-style-type: none"> SMS Program Office is the ultimate authority for SMS-related information (SASO and SPOT work in coordination with SMS Program Office)
16. Where should I go to learn more about SASO or SAS?	<ul style="list-style-type: none"> SASO Web site SASO’s quarterly newsletter Email to SASO Program Office Email to SPOT members <p>Additional Information:</p> <ul style="list-style-type: none"> SASO Web site: contains information and updates on the SASO Program SASO quarterly newsletters: contains updates on key change initiatives including SAS and Safety Promotion Outreach Team SASO Program Office email: 9-AWA-AFS-30-SASO@FAA.GOV
Safety Management System (SMS)	
17. What is the relationship between SMS and ISO 9000?	<ul style="list-style-type: none"> ISO 9000 is a set of standards for quality management systems established by the International Organization for Standardization An organization’s SMS is one of its processes, and therefore SMS processes will be developed and managed according to QMS standards (for example, once the AVSSMS is implemented, it will be subjected to QMS auditing requirements) <p>Resource:</p> <ul style="list-style-type: none"> International Organization for Standardization
18. Is SMS a tool?	<ul style="list-style-type: none"> No; SMS is a management system used to manage all aspects of safety throughout an organization. It provides a systematic way to identify hazards and control risks while maintaining assurance that these risk controls are effective
19. What is the relationship between SMS and ATOS?	<ul style="list-style-type: none"> ATOS is the FAA’s current <i>oversight system</i> for 14 CFR Part 121 SMS is a <i>management system</i>

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20. What is the relationship between SMS and NextGen?	<ul style="list-style-type: none"> “Ensuring Safety” is one of the six NextGen System Goals, and implementing an integrated safety management approach is specifically addressed as part of the NextGen Integrated Plan <p>Additional Information:</p> <ul style="list-style-type: none"> The Joint Planning and Development Office (JPDO) was established by the U.S. Congress to guide and support the creation of NextGen “The AVSSMS will fully support the NextGen JPDO National Aviation Strategic Plan” (AVSSMS Mission Need Statement, December 2008, page 8) “SMS is becoming the standard for aviation safety worldwide. In alignment with this strategy, the JPDO Senior Policy Committee recently approved the JPDO Safety Working Group developed SMS standard, establishing SMS requirements for the federal departments involved in NextGen” (FAA Flight Plan, 2009 – 2013, page 10) <p>Resources:</p> <ul style="list-style-type: none"> Order JO 1000.41, ATO NextGen and Operations Planning Safety Management System AVSSMS Mission Need Statement, December 2008 FAA Flight Plan, 2009 - 2013
21. What is the current status of the rulemaking process?	<ul style="list-style-type: none"> The FAA is seriously considering Rulemaking, and is following the process to initiate this. “[In February 2009], FAA...completed the initial ANPRM [Advance Notice of Proposed Rulemaking] and sent it for Dept. of Transportation review. The ANPRM also must undergo Office of Management and Budget review. The ANPRM is the first step toward a more forward rulemaking that would mandate SMS” (from <i>Aviation Week</i>, March 20, 2009) <p>Additional Information:</p> <ul style="list-style-type: none"> Also per Aviation Week article, “FAA is targeting a June 30 release of an advanced notice of proposed rulemaking (ANPRM)....” According to the Department of Transportation’s website on significant rulemakings, the ANPRM is expected to be published in the Federal Register in June 2009. If, upon review of the comments to the ANPRM, the FAA decides to pursue rulemaking, the FAA will issue a notice of proposed rulemaking (NPRM), which will contain the proposed rule language, and also request comments on the proposed rulemaking (<i>This message was provided by Legal in February 2009</i>) <p>Resources:</p> <ul style="list-style-type: none"> Aviation Week, March 20, 2009 Department of Transportation Website on Significant Rulemaking

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22. If a certificate holder has integrated information about their safety management system into an existing manual such as the General Operations Manual, and an FAA inspector approves that manual, is the inspector thereby approving their SMS?	<ul style="list-style-type: none"> No; because, at present, there are no authorized provisions for FAA approval or acceptance of SMS programs <p>Resource:</p> <ul style="list-style-type: none"> FAA Safety Management System (SMS) developments- No. 2
23. Do any ICAO member states officially have an SMS?	<ul style="list-style-type: none"> SMS implementation is an incremental process; reaching full capability is expected to take a number of years (2-3). Some countries—Canada, New Zealand, Switzerland and Singapore notably among them—have initiated SMS implementation; future ICAO audits will determine how far they have progressed in these efforts <p>Additional Information:</p> <ul style="list-style-type: none"> ICAO does not formally track which member states currently have a State Safety Programme (i.e., a SMS). As ICAO conducts audits of member states, part of the audit will be to answer the question, does the member state have a Safety Programme / SMS?
24. What is the SMS Pilot Project (also known as the Voluntary Implementation Pilot Project)?	<ul style="list-style-type: none"> The SMS Pilot Project is a program for certificate holders to voluntarily implement an SMS The SMS Pilot Project is led by SMS Program Office (AFS-900)
25. Is the SMS Pilot Project still ongoing?	<ul style="list-style-type: none"> Yes; at present, there are approximately 50 participants
26. Can an operator implement SMS without being part of the SMS Pilot Project?	<ul style="list-style-type: none"> Yes; any operator can develop an SMS and they do not have to be a part of the SMS Pilot Project
27. How does a certificate holder get a “Letter of Acknowledgement” for developing an SMS?	<ul style="list-style-type: none"> A certificate holder can only get a “Letter of Acknowledgement” from the SMS Program Office if they are participating in the SMS Pilot Project <p>Additional Information:</p> <ul style="list-style-type: none"> The “Letter of Acknowledgement” does not signify approval or acceptance of the certificate holder’s SMS. The “Letter of Acknowledgement” is only an acknowledgement that the certificate holder has completed a certain level of SMS implementation within the SMS Pilot Project <p>Resource:</p> <ul style="list-style-type: none"> FAA Safety Management System (SMS) developments- No. 2

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28. How will SMS save operators money?	<ul style="list-style-type: none"> As more operators implement SMS, there is increasing evidence that SMS safety analyses / assessments have resulted in improvements to operations that not only increase safety but also increase overall efficiency. These efficiency increases have also resulted in monetary savings on the part of the operators
29. If a certificate holder asks a principal inspector (PI) for guidance with respect to implementing an SMS, how can the PI help?	<ul style="list-style-type: none"> First, the PI can provide guidance material, most notably Advisory Circular 120-92, and note that: <ul style="list-style-type: none"> The implementation of an SMS can be a multi-year process The FAA encourages all certificate holders to implement SMS, but currently, the FAA cannot approve or accept such implementations (InFO 08053) Second, the certificate holder can request to participate in SMS Pilot Project if they desire a more formal SMS alignment with the FAA; if this is the case, refer them to the SMS Program Office (Don Arendt, 703.661.0516) <p>Additional Information:</p> <ul style="list-style-type: none"> AC120-92 provides a wealth of background information as well as an appendix that includes Safety Management System Functional Requirements (to be updated in the next version of AC 120-92). These requirements, while differing slightly from recently released international standards, provide a valuable starting point for the phased implementation of an SMS <p>Resource:</p> <ul style="list-style-type: none"> AC 120-92 Introduction to SMS for Air Operators FAA Information for Operators (InFO) 08053, FAA Safety Management System (SMS) Developments – No. 2
30. What happened to Order VS 8000.1?	<ul style="list-style-type: none"> The SMS Doctrine formerly found in Order VS 8000.1 has been incorporated as FAA Order 8000.369 <p>Additional Information:</p> <ul style="list-style-type: none"> The distinction between the two orders is that Order VS 8000.1 applied only to AVS, whereas FAA Order 8000.369 applies to all of FAA <p>Resource:</p> <ul style="list-style-type: none"> FAA Order 8000.369

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Question	Answer
AVSSMS	
31. What are the benefits of SMS for AVS?	<ul style="list-style-type: none"> Adopting an SMS enables the Office of Aviation Safety to more effectively and efficiently anticipate potential safety hazards, uncover and correct gaps in existing operations, provide efficiencies in conducting regulatory oversight, and ensure that regulatory requirements are established to effectively control and mitigate safety risk <p>Additional Information:</p> <ul style="list-style-type: none"> From FAA Order 8000.369, Safety Management System Guidance. "The SMS will enable the FAA to respond to changing industry business models and growth, the air transportation system's increasing complexity, and the current and future challenging budget environment by allocating resources efficiently and effectively based on data-driven risk analysis and assessment. The FAA will thus be able to provide the air transportation system and the public at large with: (1) Enhanced safety; (2) Better, innovative, more consistent and more responsive services; (3) Higher value; and (4) World leadership in establishing aviation safety standards" <p>Resource:</p> <ul style="list-style-type: none"> FAA Order 8000.369
AFS Safety Assurance System (SAS)	
33. Do all lines of business in AVS have a SAS?	<ul style="list-style-type: none"> All lines of business are responsible for safety oversight – or safety assurance – of the entities they oversee AFS has elected to call their <i>safety assurance system</i> the SAS All other lines of business, such as AIR, may design and implement a safety assurance system, but may call it different names
34. Is SAS a part of SMS?	<ul style="list-style-type: none"> Safety assurance is a component of any SMS The AFS SAS fulfills the Safety Assurance component of the AVSSMS

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Question	Answer
35. Is SAS a tool?	<ul style="list-style-type: none"> The SAS is a combination of people, processes, and technology that will constitute AFS's safety assurance capability The SAS processes, which Flight Standards will use to oversee certificate holders, will be supported by automation tools
36. Is SAS the same as ATOS?	<ul style="list-style-type: none"> SAS and ATOS are not the same ATOS is our current oversight system used to assess the safety of air carrier operating systems for CFR Part 121 certificate holders The Safety Assurance System (SAS), currently under design, will become the oversight system for CFR Parts 121, 135, and 145, including areas currently covered by ATOS Eventually AFS will use the SAS to oversee all applicable CFR Parts, not just 121, 135, and 145 <p>Additional Information:</p> <ul style="list-style-type: none"> The SAS will incorporate the best aspects of ATOS and will depict a risk-based oversight model for conducting oversight activities for certificate holders and applicants
37. Will SAS replace ATOS? Will ATOS go away?	<ul style="list-style-type: none"> The Safety Assurance System will become our system to manage oversight of CFR Parts 121, 135, and 145 certificate holders and applicants There will be no further versions of ATOS following the implementation of the SAS
38. Will ATOS and SAS run parallel?	<ul style="list-style-type: none"> We do not anticipate that both systems will run in parallel
39. What will the SAS tools look like?	<ul style="list-style-type: none"> The intent is to make the tools scalable and efficient The tools will be designed to assist us in optimizing our resources by allocating them to the areas of highest risk
40. Will our jobs change; will we redefine our roles and responsibilities?	<ul style="list-style-type: none"> The technical expertise of inspectors is critical to our oversight function. Inspectors may need to use new tools associated with SMS and oversight in order to better target areas of risk and determine which certificate holders require increased inspections As the future state of FAA oversight is better defined, inspectors may require expanded knowledge to keep pace with changing operations, technology, and maintenance practices
41. Will I have to spend more time at my desk and do more data entry as a result of the SAS?	<ul style="list-style-type: none"> Every effort is being made to make the automation as easy as possible to use so that inspectors do not have to spend more time at the desk and will be able to use their expertise in the field